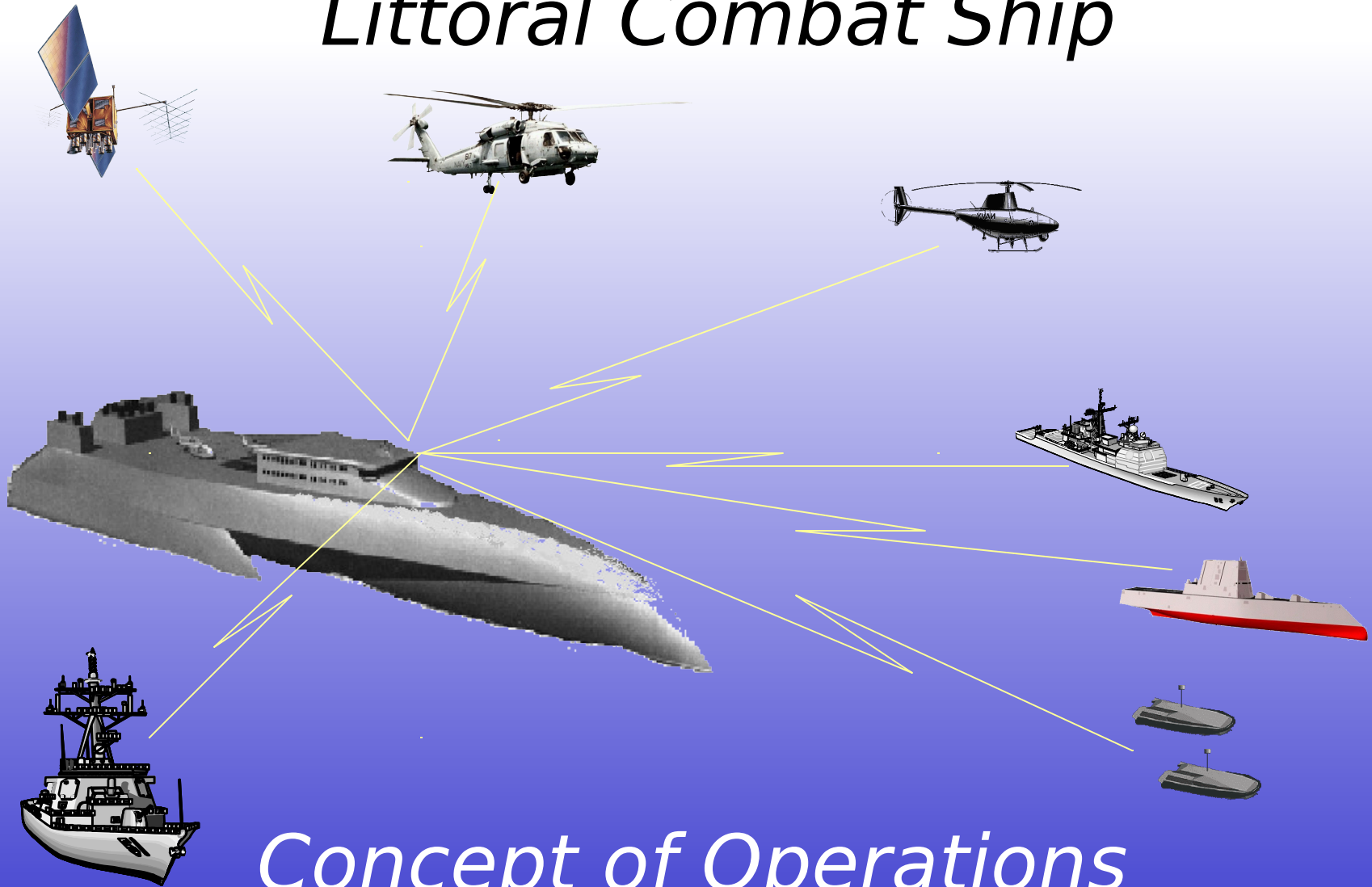


Littoral Combat Ship



*Concept of Operations
Development SITREP*

Purpose of this Brief

- **LCS CONOPS development SITREP**
- **Overarching guidance**
- **LCS employment - How LCS gets to the fight**
- **CONOPS overview - How LCS fights**
- **LCS development and experimentation**
- **CONOPS development timeline**
- **Conclusion**

What the CONOPS paper will do

- **Descriptive document defining *what* LCS has to be able to do. How LCS fits in the *Sea Power 21* operational concepts.**
- **How LCS contributes to the emerging Global Naval Concept of Operations.**
- **How LCS would be *tactically employed* in future contingency and wartime operations.**
- **The *Attributes* of LCS that enable the ship to meet 21st century transformational characteristics.**
- **How LCS will be operated, manned, supported, maintained, etc.**

CONOPS is an overarching vision of LCS and its roles.

"The Littoral Niche Player Challenge"

Overarching guidance

Communications

Imaging

Commercial Space-Based C4ISR

Navigation

Radiological

Chemical

Biological

Nuclear

Weapons of Mass Destruction

Swarming Small Boats

Anti-Ship Cruise Missiles (shore-, ship- and air-Launched)

Theater Ballistic Missiles

Advanced Conventional Weapons

Land-Attack Cruise Missiles

Ultra-Quiet Diesel Submarines

Sophisticated Sea Mines

"Double-Digit" SAMs (fixed and mobile)

Decentralized, Internetted IADS

Cluttered Environment

Threat: Asymmetric, Overlapping, Commercially Available

LCS

SEA POWER 21 ENABLER

• **SEA STRIKE**

- Performs *persistent ISR*
- *Enable Forced Entry* for *Joint Power Projection*
- Engage in power projection w/ *USMC (STOM) and SOF (covert strike)*

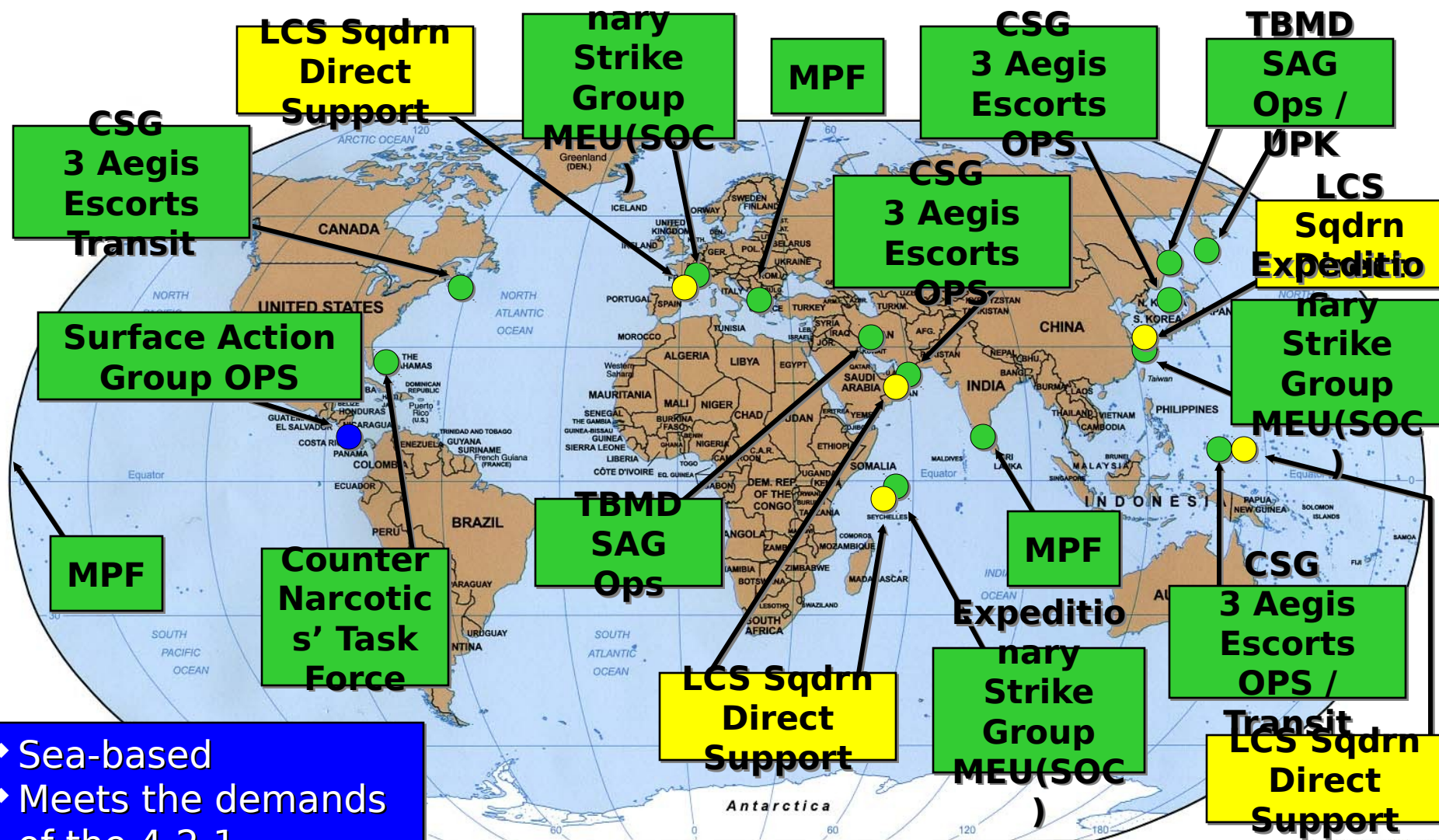
• **SEA SHIELD**

- Provides *assured access* by conducting MIW, littoral ASW, SUW, ISR, and SOF support missions
- Support *Homeland Defense* thru MIO and ISR roles
- Provide *Sea / Littoral Superiority* by conducting MIW, Littoral ASW, SUW and ISR missions

• **SEA BASING**

- Projecting persistent *Offensive and Defensive Power*
- Provide security for *Joint Assets* & enable sea-based forces

LCS Enables the Fleet to Provide Persistent Presence and Power - Global CONOPS



- ◆ Sea-based
- ◆ Meets the demands of the 4-2-1 strategy, and...

✓ Starting now

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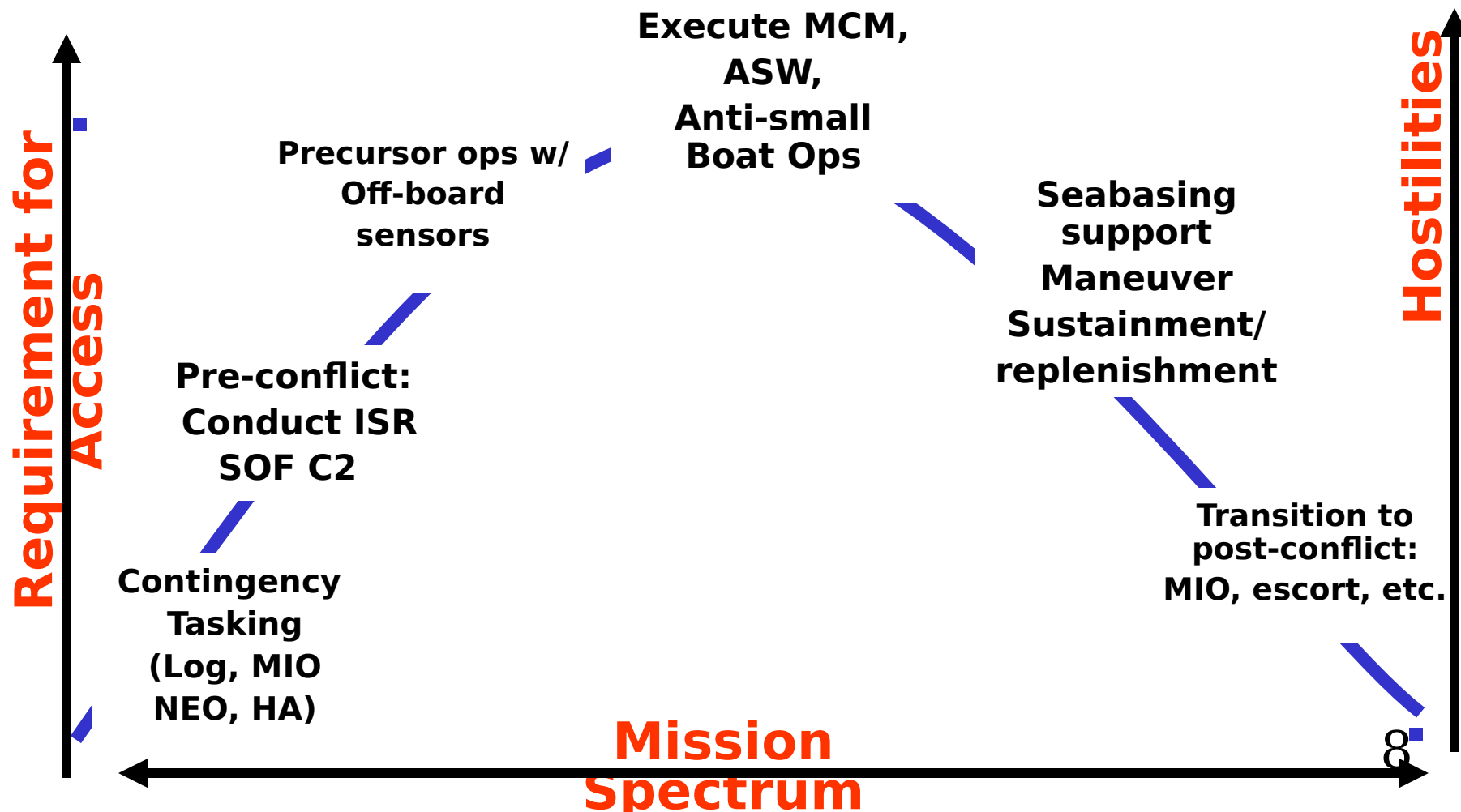
Overarching

LCS CONOPS Overview

- **Tailored warfighting capabilities**
- **Three LCS employment concepts**
- **LCS attributes and associated modules**
- **Supports distributed off-board systems**
- **Risk reduction**

LCS CONOPS

Tailorable access force provides capability across a broad spectrum of missions



LCS Employment Concepts

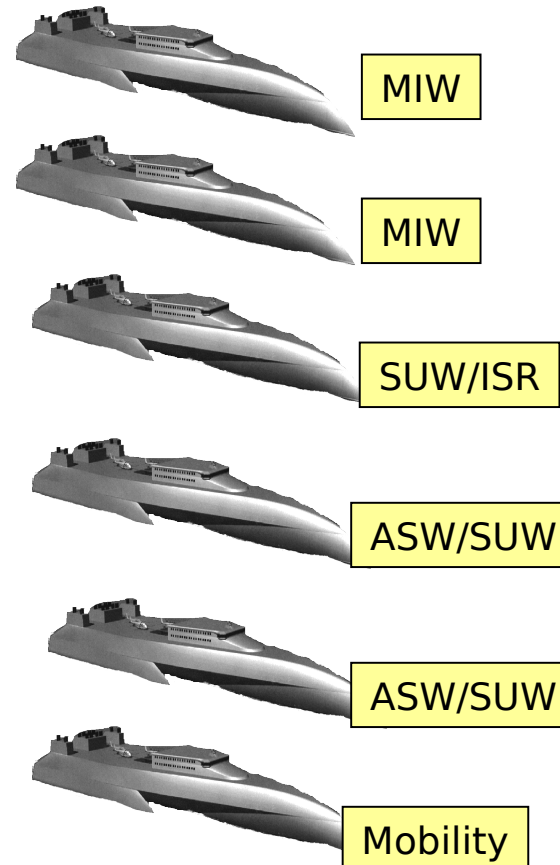
- **Integrated with CSG/ESG**
 - Notionally, 2 to 3 LCS ships assigned to each strike group
 - Mission configuration will complement other strike group combatants
 - Commander determines “tailored” mission configurations
- **LCS Squadron Operations**
 - Collective flexibility & versatility while providing mutual support
 - Forward deployed, but not forward based
 - Maintaining a continuous presence in critical theaters of operation
 - First response capability to anti-access crisis
 - Integrated with Joint Task Force assets to execute Access assurance
- **Limited Independent Operations**
 - Mobility mission tasking in a known threat environment
 - Rapid response to contingency mission tasking

Flexible & responsive . . . Supporting Global ConOps

LCS Squadron Concept

- **Collective flexibility & versatility**
- **Forward deployed, but not forward based**
- **Mutual replenishment & logistic support**
- **Maintaining a continuous presence in critical theaters of operations**
- **First response capability to anti-access crisis**
- **Integrated with Joint Task Force assets to execute Access assurance**
- **Operations in direct support by CSO**

Notional Squadron Configuration



Uninstalled packages

SOF

MIO

Medical

MIW

ASW

IO

Simultaneous rollback of anti-access threat with squadrons of LCS - not single ships

“The warfighting potential of LCS can only be achieved through the synergy between tailored mission packages and a platform optimized to exploit them employing innovative concepts of operations.”

**VADM LaFleur,
CNSF**

LCS Attributes



“Based on...”

Experimentation
at Sea.
(HSV, Skjold,
Visby, Triton)

Results of
Global War
Gaming, & FBEs.

Fleet Input &
Responses.

Focused LCS
Workshops.

Studies &
Analysis

LCS Capabilities

Fleet guidance says...

- **Heavy reliance on unmanned and off board systems.**
- **Mission capability comes aboard with mission packages.**
- **Mission packages are “plug-in” like technology... connect to LCS core support systems.**
- **Mission packages may include additional “trained” personnel to operate equipment.**
- **High payload fraction enables.**
- **Packages “built” for rapid reconfigurability, are scalable and transportable by air & ship.**

**Like an “air frame,” visualize LCS as a
“sea frame”**

Modular Mission Capabilities

Mine Counter Measure package

- ✓ “Need a punch through capability”
- ✓ Search, map, avoid with limited neutralization.
- ✓ Support and operate helos and remote & autonomous UVs.

littoral ASW package

- ✓ Integrated with multiple off-board sensor systems.
- ✓ Automatic on-board processing.
- ✓ Helos.

Small boat prosecution package

- ✓ “Need to engage from close aboard to over-the-horizon”
- ✓ Stabilized gun and missile system.
- ✓ Integrated with EO/IR system.
- ✓ Include non-lethal capabilities.
- ✓ Helo's & off-board systems

Other potential module missions

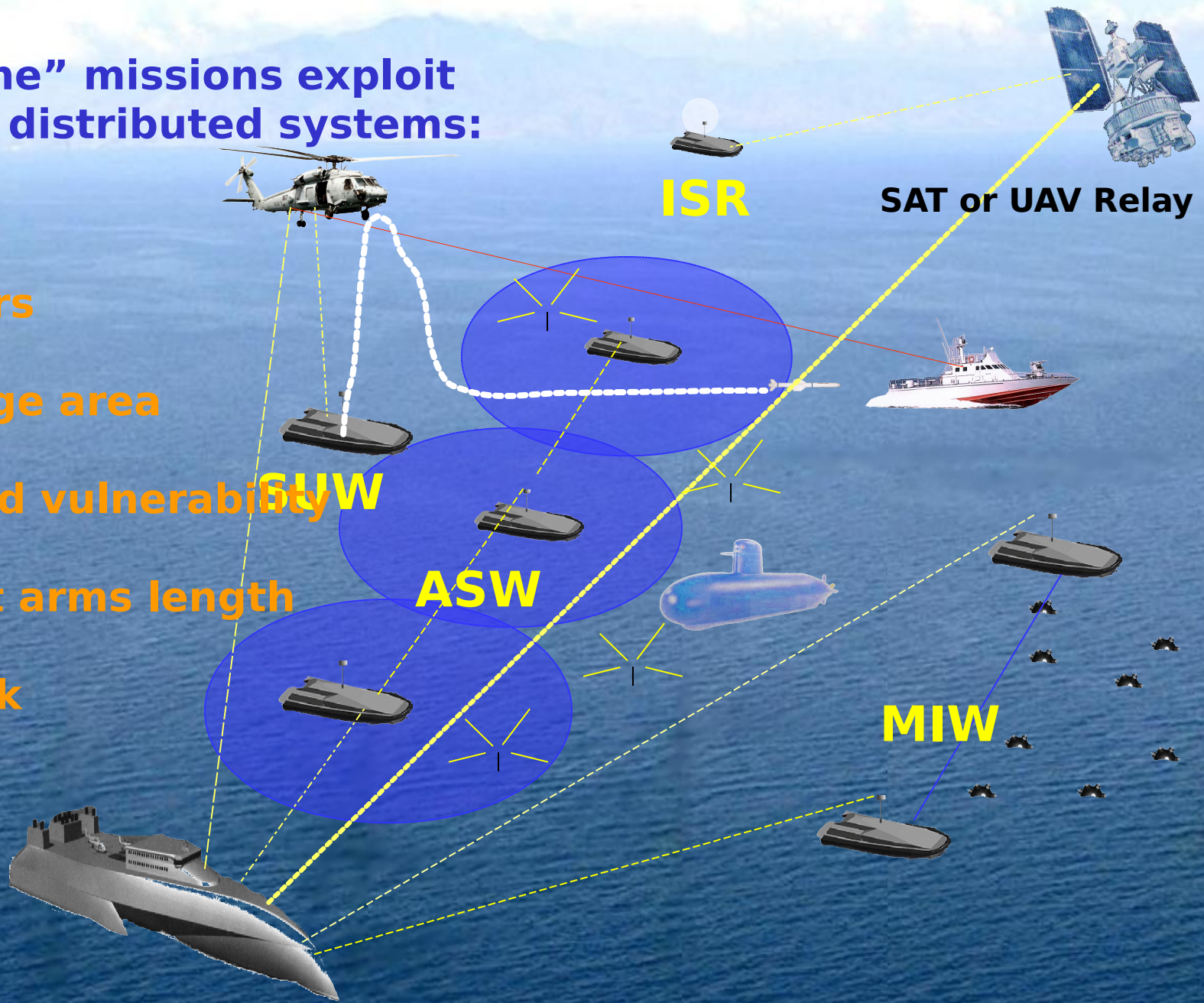
- ✓ Mobility mission support
- ✓ SOF
- ✓ NEO
- ✓ MIO
- ✓

Distributed Off-Board Systems

CONOPS Overview

LCS “niche” missions exploit power of distributed systems:

- Numbers
- Coverage area
- Reduced vulnerability
- Keep at arms length
- Network



FORCEnet

- **Tactical network capabilities are critical to LCS CONOPS**
- **Challenge is providing OTH connectivity between LCS and unmanned sensors/vehicles**
- **Several strategies are under study. These efforts need resources to enable a network capability**
- **Mission packages must set network requirements**

Without FORCEnet, LCS will be as limited in value as previous small U.S. Navy ships

LCS risks are mitigated by...

- **Platform Attributes**
 - Speed and agility
 - Shallow draft
 - Signature management and deception
- **Environment**
 - Maneuver and dispersion
 - Clutter and complexity
- **Networked threat awareness**
 - Off-board distributed sensors
 - Reach-back
 - Links with ESG/CSG
- **CONOPS**
 - Standoff using OBS
 - LCS as a tripwire

...conducting “niche” missions, with potentially more numbers. LCS does NOT deliver “the crushing blow.”

LCS Development Issues

- **Focus is on LCS attributes and warfighting capabilities**
 - Mission package development, employment and logistics support considerations
 - LCS platform interface requirements for mission packages
 - Network and autonomous off-board systems development and integration
 - Signature reduction, innovative materials, hull forms, propulsion
- **But Organizational Innovations are still required**
 - Innovative crewing methods for core/module missions
 - Mission planning and training
 - C2 for spectrum of missions and employment options
 - Maintenance support

Experimentation will play a critical role in filling the “gaps” in LCS development

LCS Trade Space

- **Hullform**
- **Seakeeping**
- **Speed**
- **Endurance**
- **Displacement**
- **Draft**
- **Payload fraction**
- **Construction material**
- **Signature**
- **Cost**

Experimentation defines the trade space

LCS CONOPS TIMELINE

- ✓ **01 OCT:** **NWDC CONOPS brief submitted to CFFC, CNSF, N76, CNSL, PEO(S) for initial review.**
- ✓ **7 NOV** **NWDC CONOPS sitrep brief to CFFC**
- ✓ **Wk 12 NOV** **NWDC CONOPS sitrep submitted to**
OPNAV Staff **and others**
- **Wk 25 NOV** **NWDC brief CNO on CONOPS**
development
- **3-4 DEC** **SWFOC presentation on LCS CONOPS**
- **10-11 JAN** **SWCC presentation on LCS CONOPS**
➤ CNSF/NWDC delivers CONOPS to CFFC for final approval
- **31 JAN** **LCS baseline CONOPS document submitted to**
N76
➤ Brief to competing LCS industry teams and others

Conclusions

- **Strategic environment requires capabilities that are**
 - Adaptive, responsive, self-sustaining
- **LCS is a transformational response to this strategic environment requirement**
 - LCS spiral development and CONOPS will be dynamic throughout the entire life of the ship
- **The modular approach and open architecture allows LCS to be evolved and modernized to meet:**
 - Emerging technology
 - Evolving threats
 - A wide spectrum of missions
- **LCS CONOPS provides the pathway to fuse the platform, mission packages, and network into a warfighting capability.**

Questions?